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DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

Project No. W-168-C-3

FEDERAL AID TO WILDLIFE RESTORATION

July 1, 1985 - June 30, 1986



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PROGRESS REPORT

Study I, Job 1: Wildlife Research Coordination

Prepared by:

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Wildlife Research Manager

November 1986

STATE: Idaho PROJECT NO.: W-168-C-3
STUDY: 1 STUDY TITLE: Wildlife Research
JOB: 1 JOB TITLE: Wildlife Research
PERIOD COVERED: July 1, 1985 to June 30, 1986 Coordination

ABSTRACT:

Project supervision was maintained for all wildlife research projects, including study plan development, document preparation, report editing, submitting project reports, and budget preparation. Federal aid coordination was provided for all wildlife research, management, and land development projects.

OBJECTIVES:

To plan project work and to provide supervision and administrative support for all P-R funded projects.

FINDINGS:

Project documentation, budgets, reports, and personnel evaluations were completed for each field project. A general summary of the activities of the research biologists during the year follows:

Subproject No. 5: California Bighorn Sheep Ecology.
Principal Investigator: Dale E. Towell.

ABSTRACT:

Considerable time was spent revising the Bighorn Sheep Study Plan and becoming acquainted with the study area during the project period. The remainder of time was used to complete the final caribou ecology report. No additional project work was initiated.

Reports, Publications, Articles:

Scott, M.D. and G. Servheen. 1985. Caribou ecology. Idaho Department of Fish and Game Job Completion Report. Project No. W-160-R-11.

Parker, T. and M.D. Scott. 1985. Bighorn Sheep Management Plan. 1986-1990. Idaho Department of Fish and Game. 47 pp.

Crawford, R.C. and M.D. Scott. 1985. Physical and habitat description of the Selkirk caribou study area. Idaho Department of Fish and Game report to the supervisor's office, Idaho Panhandle National Forests. 53 pp.

Scott, M.D. 1986. Preference vs. need. Tomorrow's Forest 1(1):16-17.

Meetings and Presentations:

- 07/11 Boise District BLM staff meeting. Was introduced to BLM staff personnel. Boise.
- 08/06 Caribou transplant meeting with Director Conley, USFS and USFWS personnel and Senator McClure's staff. Agreed to evaluate additional release sites. Boise.
- 08/28-30 Wildlife Biologists' meeting. Reviewed five-year species management plans. Ketchum.
- 09/03 Region 3 personnel meeting. Developed 1986 fisheries recommendations. Boise.
- 09/04 Caribou transplant meeting. Director Conely, USFS and USFWS personnel, Senator McClure's staff, and Bonner's Ferry Chamber of Commerce. Presented additional information on caribou and the transplant. Bonner's Ferry.
- 09/07 Public meeting on 1986-1990 waterfowl plan. Assisted Region 3 personnel. Boise.
- 10/22 United Way Campaign meeting. Boise.
- 10/28 Met with BLM and USFWS personnel to discuss development of HEP model for California bighorn sheep.

Subproject No. 9: Sage Grouse Ecology.
Principal Investigator: J.W. Connelly.

ABSTRACT:

Sage grouse (Centrocercus urophasianus) were trapped and marked on leks in the study area and control area between mid-March and mid-April. Seventy-two birds were captured, and 19 of these birds were equipped with radio transmitters. Almost 400 radio locations were obtained on these birds from 22 April to 30 June. Seven of eight radio-marked hens were followed through the nesting season and all of these birds nested. Two of the nests were destroyed by predators. During June, the juvenile:adult female ratio was 233 and mean brood size was 3.7 young. Population monitoring techniques are still being evaluated.

Reports, Publications, Articles:

- Browers, H.W. and J.W. Connelly. 1986. Capturing sage grouse with mist nets. *Prairie Nat.* 18: 185-188.
- Reynolds, T.D., J.W. Connelly, D.K. Halford, and W.J. Arthur. 1986. Vertebrate fauna of the Idaho National Environmental Research Park. *Great Basin Nat.* 46: in press.
- Rybarczyk, W.B. and J. Connelly. 1985. Upland game management plan, 1986-1990. Idaho Dept. Fish and Game, Boise. 37 pp.
- Connelly, J.W., H.W. Browers, and R.J. Gates. Seasonal movements of sage grouse in southeastern Idaho. *Jour. Wildl. Manage.* Submitted.
- Gates, R.J., H.W. Browers, and J.W. Connelly. Seasonal range fidelity in southeastern Idaho sage grouse. Peer Review.

Meetings and Presentations:

- Western States Sage Grouse Workshop. July 23-24, 1985, Alturas, CA.
- Autenrieth, R.E. and R.C. Martin. 1985. Predicative value of spring weather and sage grouse wing and lek data. Presented at the 14th Western States Sage Grouse Workshop, July 23-24, Alturas, CA.
- Martin, R.C. 1985. Sage Grouse responses to wild fires in spring and summer habitats. Presented at the 14th Western States Sage Grouse Workshop, July 23-24, Alturas, CA.
- Annual Meeting of the Idaho Chapter - The Wildlife Society. March 7-8, 1986, Boise, ID.

MULE DEER RESEARCH

Subproject Title: Mule Deer Ecology.
Study Title: Mule Deer Population Identification.
Principal Investigator: C.G. Brown.

ABSTRACT:

Fifty-six mule deer were captured and marked, 20 with radio collars, on six Unit 73 winter ranges during December 1985 and January 1986. Aerial monitoring was conducted on 41 dates during the year. Summer-fall ranges for deer averaged 251 ± 151 ha (n=12) in 1985. Distances moved during the year averaged 27 ± 12.5 km and ranged up to 89 km. All six deer monitored in both 1985 and 1986 returned to their 1985 summer ranges and five of six used their 1985 winter range in 1986.

Unit 73 was tentatively divided into 9 relatively distinct areas with differing security characteristics. Topographical characteristics and road densities were determined for 5 of these units. Security provided by these units was estimated subjectively and the areas ranked. Aerial counts of vehicles in 6 study areas providing habitat of apparently different security were conducted on 6 dates during the 1985 hunting season with daily counts ranging between 34 and 457 vehicles. Field interviews of hunters found numbers of hunters per vehicle averaged 2.25. Observed hunting pressure varied with respect to opening day, opening of either-sex hunting, time of week, period of season, and among study areas. Aerial relocations of 11 radio-collared deer were obtained on 10 occasions within the 43 day period prior to hunting season and on 9 occasions through the hunting season. Deer in more secure habitat continued to use their established summer range during the hunting season while deer occupying less secure habitats either were killed or made major movements to apparently more secure habitat areas.

Reports, Publications, Articles:

Trent, T.T., W. Bodle and C. Brown, 1985. Mule Deer Management Plan, 1986-1990. Idaho Dept. Fish and Game, Boise. 43pp.

Study Title: Mule Deer Census.
Principal Investigator: B.B. Ackerman.

ABSTRACT:

A total of 150 sightability trials have been completed on the Malad and Willow Creek study areas. Factors which appear to cause significant differences include group size, group behavior, vegetation type, and time of year. Only 55% of the radio-collared deer were seen during sightability trials. Corrected counts indicate that 7-47% of all deer were missed during "total" counts under different conditions. Sightability corrections should improve trend counts in the future.

Reports, Publications, Articles:

Ackerman, B.B., E.O. Garton, and M.D. Samuel. 1986.
Autocorrelation in home range estimators: a comment. Peer Review.

Study Title: Willow Creek Deer Study.
Principal Investigator: T. Thomas.

ABSTRACT:

Seven additional radio collars were fitted in 1986. Nine marking collars and 14 colored ear tags and 1 metal tag only were also placed on deer. Returns and sightings were few on deer marked in 1983-85. With few exceptions, deer were found on summer ranges at the beginning of the general deer season just as in 1984. Deer were consistent in their use of migration corridors again in autumn 1985 (limited data) and the spring of 1986. Spring migration began one month earlier than 1985 probably due to a mild winter and early spring. All but two deer exhibited strong fidelity to the area where they were captured. There is evidence for one definable herd unit. Habitat selection by deer was investigated using ground survey routes, relocation flights and three grid flights. Impact of deer grazing on winter wheat was also investigated and found nonsignificant at $\alpha = 0.05$. Habitat use during hunting season and migration was determined by analysis of color slides taken at time of relocations and data taken from 7.5 minute topographical maps. Habitat availability was determined by analysis of 242 color slides.

Subproject No. 12: Elk Ecology
Principal Investigator: Lonn Kuck
Investigator: James W. Unsworth

ABSTRACT:

Field activities for this study were initiated. A total of 30 bulls and one cow elk were successfully tranquilized and instrumented with radio transmitters. A total of 31 bulls and 5 cows were monitored on a weekly basis by fixed-wing aircraft to establish habitat use patterns, home ranges and movements. A total of 619 relocations were generated during the past year. A cover map of the study area using LANDSAT photo imagery techniques was completed through the preliminary evaluation phase in cooperation with the Clearwater National Forest. Through the application of the elk sightability model and systematic sampling procedures, an elk inventory in game management unit 12 was completed. The intent of this phase of the project was to project total population numbers, bull:cow and cow:calf ratios within known levels of precision. Preliminary projections include total number of elk 4,653 plus or minus 919, total bulls 1,244 plus or minus 492, total cows 2,770 plus or minus 535 and total calves 599 plus or minus 73.

Age and sex ratios included 45 bulls per 100 cows, 22 calves per 100 cows and 43 spike bulls per 100 cows and 43 spike bulls per 100 adult bulls. The only significant difference in population parameter from 1985 to 1986 was a significant drop in calf production at the .05 level.

Reports, Publications, Articles

- Kuck, L. 1986. Mountain goat management plan 1986-1990. Idaho Department of Fish and Game. Boise (In Press).
- Kuck, L. 1986. The impacts of phosphate mining on Idaho big game - a cooperative approach to conflict resolution. Trans. N. Amer. Wildl. Conf. (In Press).
- Kuck, L. 1986. Mountain goat harvest strategies in Idaho. Proc. Northern Mtn. Sheep and Goat Council (In Press).
- Kuck, L. and J.W. Unsworth. Elk ecology Fed. Aid Prog. Rep. W-160-R-12, Idaho Dept. Fish and Game, Boise. 23 pp.
- Pierce, D.J., B.W. Ritchie and L. Kuck, 1985. An examination of unregulated harvest of Shiras moose in Idaho. Alces 21:231-252.

Meetings and Presentations

Lonn Kuck

- 7/14 Region II Personnel Meeting, Lewiston.
- 8/8-9 Forest Industry Information Meeting, Bill Creek Ranch.
- 8-19 Forest Service, Lowell.
- 8-20 Elk Planning Team Meeting, Lewiston.
- 9/9-12 International Association Fish and Wildlife Agencies. Sun Valley. Gave slide presentation on potential impacts of oil and gas development on big game in Idaho.
- 9/19 Clearwater National Forest Regional Review, Orofino.
- 10/2-4 Commission Meeting, Boise. Presented 1986-1990 mountain goat management plan.
- 10-21 Forest Industry - Forest Supervisors Meeting, Moscow.
- 10/30-31 Forest Service Road Closure Program, Clark Fork.
- 11/5 Bald Eagle Meeting, Coeur d'Alene.
- 11/12-13 White-tailed Deer Workshop. Billy Creek Ranch.
- 11/19 BPA Meeting, Lewiston.
- 12/6 Caribou Technical Committee, Spokane.
- 12/9 Elk Management Workshop, Lewiston.
- 12/19 Elk Sightability Meeting, Lewiston.
- 1/9 Montana-Idaho Forest Service Road Closure Meeting. Missoula, MT.
- 1/17 Elk Sightability Coordination Meeting, Moscow.
- 1/19 Idaho State Bowhunting Dist. I & II, Moscow. Gave elk sightability and road closure programs.
- 1/24 Region I U.S. Forest Service, Missoula, MT.
- 2/13 Elk Sightability Planning Meeting, Lewiston.
- 2/14 White-tailed Deer Meeting, Moscow.
- 2/20 Supervisory Meeting, Lewiston.
- 3/10 Northwest Nazarene College, Nampa. Presented slide series on mountain goat ecology.
- 3/30 Wildlife Research Meeting, Lewiston.
- 3/23-26 North American Wildlife and Natural Resources Conference, Reno, NV. Gave paper on impacts of phosphate mining on Idaho big game - a cooperative approach to conflict resolution.
- 4/1 Grizzly Bear Coordination Meeting, Lowell.
- 4/7-11 In-Service Training School, Boise. Gave programs on elk sightability and road closures.
- 4/13-16 Northern Mt. Sheep and Goat Council. Participated on panel concerning mountain goat hunting strategies.
- 4/27 Idaho-Montana Fish and Game Dept. Coordination Meeting, Coeur d'Alene. Gave elk sightability program.
- 4/24 Grizzly Bear Coordination Meeting, Lewiston.
- 5/20-21 Wildlife Research Meeting, Boise.
- 5/22-23 Wildlife Telemetry Workshop, Boise.
- 5/27 Region I Graduate Student Meeting, Coeur d'Alene.
- 6/3 Caribou Technical Committee, Coeur d'Alene.
- 6/10-11 Clearwater N.F. Interagency Meeting, Pittsburg Landing. Gave elk sightability program.
- 6/25 Nez Perce N.F. Interagency Meeting, Grangeville. Gave elk sightability program.

J.W. Unsworth

On July 25, 1985, I met with D. Davis, W. Melquist, B. Buttefield, C. Brown, D. Graham, R. Escano, W. Hann, B. Gale, and S. Bane in Missoula, Montana to discuss VICAR-IBIS and its use for qualifying LANDSAT Images.

I attended the biologists meeting, August 27-August 30, in Ketchum. We discussed five-year management plans.

The elk research team attended a meeting with the USFS on August 19, at Lowell. We discussed our study plan and the Forest Service's priorities for future research on the Clearwater National Forest.

On September 26, I attended training for nonenforcement people at the regional office in Lewiston.

On October 24, I attended a meeting with G. McNeill, B. Rybarczyk, and L. Nelsen in Lewiston. We discussed increased sample size needs to reduce confidence intervals on estimates from the telephone survey.

On November 12 and 13, I attended a workshop on white-tailed deer in the Billie Creek Ranch.

On December 9, 1985, I attended a meeting at the Lewiston office to discuss possible ways to use data collected in Region 1's mandatory check.

I attended a white-tailed deer meeting in Moscow on February 14, 1986. Department and university people were present.

From March 15, 1986 to March 20, 1986, I attended the Western States Elk Workshop in Coos Bay, Oregon.

On March 24, 1986, I attended an interagency meeting with Clearwater N.F. in Orofino. I presented a slide show on the elk research project.

On March 26, 1986, I attended a personnel meeting in Lewiston on 1986 hunting seasons. I presented preliminary results from the elk sightability survey.

On April 1 through April 5, 1986, I attended a microcomputer workshop at the University of Idaho.

From April 7 to April 11, 1986, I attended the Department ISTS in Boise, Idaho. Lonk Kuck and I prepared a slide show on our sightability study and Kuck presented it.

On May 19 through May 21, 1986, I attended a wildlife research section meeting in Boise.

I attended a workshop on how to analyze radio telemetry data in Boise on May 22 and May 23, 1986.

On June 30, I attended a meeting on GIS applications in Boise.

Subproject No. 100: Fisher Ecology
Principal Investigator: Lonk Kuck; Jeff Jones

ABSTRACT:

Michael H. Luque, a University of Idaho graduate student, left the fisher ecology project early in the year. With Luque's departure essentially all data collection for the study was terminated. A two-man trapping crew was hired to maintain the trapping and marking phase of the project active through the winter period. A total of nine fishers were successfully trapped and instrumented with radios. Near the end of the year the study was restructured to incorporate the cooperative support from the Nez Perce National Forest. Jeff Jones, a wildlife biologist with the Forest Service has agreed to complete the study and use the results as a thesis topic for his master's degree from the University of Idaho.

Submitted by: John J. Beedham
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Federal Aid Coordinator

Approved by:

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